tray covered with lighted lamps fell to pieces, while being carried; a lamp was upset, and, although the burning mass was heroically carried towards the exterior by the Sub-Curator and a caretaker, the building, its valuable contents, museums, and books, were for the most part destroyed. Prof. Wright has been for some months on a tour of inspection in Europe, seeking, among other things, gifts of specimens and books. Truly, our Canadian brethren do not deserve these unless better able to take care of them than in the past. Prof. Wright assures us that such will be the case, and, on his behalf, we appeal to specialists and others who may be possessed of duplicates, and to those who may be otherwise willing, to help. The position is one which threatens to injure seriously the educational prospects of a rapidly advancing country to which we, at home, are much beholden; and it calls for combined action, by which alone a loss such as that we deplore can be made good.

NOTES.

AT a meeting of the Royal Geographical Society of Australasia, held at Melbourne on August 22, a letter from Sir Thomas Elder was read, in which he offered to bear the entire cost of an expedition to the unexplored regions of Australia. A report on the question of Antarctic exploration was also submitted to the meeting. In this report it was stated that public interest in the subject had been revived by the announcement that Baron A. E. Nordenskiöld, after a conference with his friend, Baron Oscar Dickson, had consented to take the command of an expedition to the South Polar regions, on the condition that the Australian colonies contributed a sum of £5000 towards the expenses, Baron Dickson having offered to advance the other moiety, or whatever more might be necessary. "The offers were cordially accepted, and the Antarctic Committee felt itself justified in making the necessary arrangements without delay for collecting the amount to be contributed by the Australasian colonies. The Council of the Society had passed resolutions recognizing a national duty in the exploration of the Antarctic regions, especially that portion lying opposite to Australasia, pledging itself to use its influence in promoting the enterprise, and giving authority to head a subscription list in aid of the Swedish-Australian Exploration Fund with a donation of £200 from the Society's funds. It would appear from the hearty reception accorded to the proposals of the Antarctic Committee that the latter might rely upon the energetic co-operation of all the scientific societies of Australasia, and thus be enabled to collect the amount of the contribution promised towards defraying the expenses of the combined Swedish and Australian Exploring Expedition to the South Polar Regions." The report on being put to the meeting was "received with acclamation."

AN expedition to Greenland will start from Denmark next year, under the command of Lieutenant Ryder, to investigate the east coast between lat. 66° and 73°.

PROF. EDWARD HULL, F.R.S., has severed his connection with the Geological Survey of Ireland, of which he has been Director for nearly 21 years. The one-inch geological survey of Ireland having been completed, the staff has been reduced. The Dublin *Daily Express*, commenting on Prof. Hull's retirement, says he takes with him "the best wishes of his colleagues, who will retain a vivid recollection of the consideration, kindness, and sympathy which he ever manifested towards them."

THE India Store Department lately sent to the Royal Gardens, Kew, specimens of oak-staves which had formed part of a beer-barrel. The barrel was made in the early part of 1889, filled with malt liquor in the autumn, and shipped with others as Government stores in March 1890 to Calcutta. The contents were spoiled, and the authorities at Calcutta reported that some casks were found to have been attacked by wire-worm or borer. Were the casks unsound when shipped from this country, or had they been attacked on board ship during the voyage out? The matter was submitted to Mr. W. F. H. Blandford, Lecturer on Entomology at the Indian Civil Engineering College, Cooper's Hill; and his report, which embodies the results of much ingenious labour, is published in the new number of the *Kew Bulletin*. "Notwithstanding the somewhat scanty material that was available," says the *Bulletin*, "Mr. Blandford has very skilfully traced the cause of the injury, and probably also identified the particular insect concerned. Further, he has shown that the injury to the wood had occurred before it was worked up into barrels, although, owing to the very minute holes made by the insects, it was almost impossible to detect their presence." Other subjects dealt with in this number of the *Bulletin* are: prickly pear in South Africa, Jarrah timber, treatment of mildew on vines, cultural industries in West Africa, and economic plants of Madagascar.

MR. CECIL CARUS-WILSON writes to us that he has recently invented a luminous crayon for the purpose of enabling lecturers to draw on the blackboard when the room is darkened for the use of the lantern. He hopes that the invention may prove of value not only to lecturers who use a lantern, but also (in another form) to those students who wish to take notes.

MR. ROBERT SWORDY, of Dryburn Cottage, Durham, sends us a letter which has been printed in the *Durham County Advertiser*, giving an account of a toad (*Bufo vulgaris*) which he recently saw crawling out of the Pond Wood at Aykleyheads. The muscles of the toad's body were (as usual) arranged in such a fashion that the back of the toad looked like minute nodules of dark gravel embedded in a damp path below trees; but what seemed to Mr. Swordy most remarkable was that on the top of this gravel-like arrangement of muscles there was spread a mesh or network of very fine lichen, with oval-shaped leaves of a lightish green colour, connected more or less to each other by a hair-like process of stems. This lichen spread irregularly over the toad's back, and odd sprays of it were also to be seen on the legs and upper surfaces of the feet. "Now," says the writer, "had the toad been in its regular haunts under the trees and shrubs, with this wonderful counterfeit of gravel and protective colouring, it would have been almost impossible to discriminate its form from the dark gravel, lichens, moss, wood-sorrel, and dead leaves of the place, and I doubt not that this animal's unobtrusive attire would aid it materially in capturing the insects necessary for its sustenance." Mr. Swordy encloses photographs of the toad sitting on a section of lichen-coloured gravel path, taken from near the spot where he found it.

MESSRS. THOS. J. SYER AND CO. inform us that they have, at 45 Wilson Street, Finsbury Square, London, a class-room in which are taught, practically, various trades, such as carpentry, cabinet-work, wood-carving, &c. The winter session is said to have been very successfully opened, and Mr. Syer, who acts as principal, invites anyone who may be interested in the subject to visit the room, and see the work in progress.

A WORK on art among the Dayaks of Borneo, by Alois Raimund Hein, has been issued at Vienna. The publisher is Alfred Hölder.

MR. WILLIAM P. COLLINS, scientific bookseller, has issued a Catalogue (No. 24) of miscellaneous scientific books.

THE next meeting of the Royal Microscopical Society will be held on Wednesday, the 15th inst., at 8 o'clock, when the following papers will be read:—Note on a new type of Foraminifer, by H. B. Brady; new method of demonstrating intercellular protoplasmic continuity, by P. C. Waite; and, simple form of warm stage for the microscope, by F. Dowdeswell.

THERE is some difference of opinion as to the original meaning of the word "kangaroo." At the meeting of the Linnean Society of New South Wales on August 27, the question was discussed whether, in the dialect of the blacks of the Endeavour River, the word signified "I don't know," and was so used in answer to the queries of Captain Cook's party, or whether, as Cook supposed, it really was the name of the animal in use among the aborigines of the locality.

AT the same meeting Mr. A. J. North criticized the statement of the late Mr. Gould that the gay attire of the members of the genus *Malurus* "is only assumed during the pairing season, and is retained for a very short period, after which the sexes are alike in colouring" ("Hand-book to the Birds of Australia," i. 317). According to Mr. North, full-plumaged males, more particularly in the section of the genus in which blue predominates, are to be met with all the year round.

A VALUABLE contribution to the subject of atmospheric electricity has been lately made by Prof. L. Weber, who, in experiments at Breslau, used a sensitive, earth-connected galvanometer, instead of the electroscope in Exner's method. Using Exner's metallic rod and flame, he found that the currents were extremely small, about a micromilliampere (or the thousand-millionth part of an ampere). They were increased with a longer rod and bigger flame; but much better results were got with a kite or captive balloon. The edge of the kite was coated with silver paper, and the tail was formed with tassels of the paper. A line of fine steel wire was used, and about 12 feet at the upper end were of non-conducting string. Experiments were made on 12 cloudless days. Taking the intensities of current as ordinates, and the heights to which the kite (or balloon) rose as abscissæ, the curve of intensity had its convex side to the axis of abscissæ. On but few days was the current negative, this effect being probably due (the author thinks) to dust charged with negative electricity which it gave to the line. This might neutralize some of the positive electricity set flowing in the wire by the earth's induction. Prof. Weber considers that any experiments on the earth's surface with short conductors can at best give relative values and determine periodical changes. His values differ not inconsiderably from Exner's. At a height of 350 m. (1166 feet) the potential was found to be 96,400 volts; and, assuming a regular increase of potential with height, the fall of potential would here be 275 volts. The potential of the earth is estimated at the enormous value of $1720 \cdot 10^6$ volts. Supposing the volt to be about the electromotive force of a Daniell element, a huge battery of this number of elements would be needed to produce the earth's potential, the zinc pole being connected with earth, and the copper led into space. Prof. Weber considers the question of possible electric repulsion from the earth, and is led to some instructive remarks on rain particles, clouds, &c. Some very interesting effects were obtained from thunder-clouds; but for these and other matters we may refer to the original (an account of these researches appears in *Humboldt* for September).

THE Smithsonian Institution is publishing some interesting reports of the results of explorations by the U.S. Fish Commission steamer *Albatross*. In one of these reports Mr. Charles H. Townsend deals with birds from the coasts of western North America, and adjacent islands. Mr. Townsend, referring to several of the islands visited by the *Albatross*, points out that a rich field awaits the naturalist who may explore them. "The islands of the Santa Barbara group," he says, "have hitherto been very imperfectly explored with regard to their fauna. Clarion and San Benedicte Islands, of the Revillagigedo group, had never before been visited by naturalists. Socorro, an island of the same group, and one abounding in peculiar species of vertebrates, had not been visited since the type specimens were collected by Grayson, about the year 1870. The flora of all the Revillagigedo Islands is practically unknown, as the *Albatross* brought back only a small collection of flowering plants."

THE Royal Meteorological Society have published the first part of vol. x. of the *Meteorological Record*, containing the results of observations for the quarter ending March 31 last, with remarks on the weather by W. Marriott, Assistant Secretary, containing a large amount of useful information, compressed into 20 pages. The remarks show at a glance whether temperature, rainfall, &c., have been above or below the average; for the period in question the temperature of January was, on the whole, very mild, while cold spells occurred from February 3–15, and from February 20 till March 5. During the first few days of March, temperatures were lower than in any other March for nearly 50 years; but, on the whole, the temperature of the quarter, and also the rainfall, were above the average. The tables contain the values of bright sunshine for 31 stations; monthly results of observations at stations of the second order (for 9 a.m. and 9 p.m.) at 25 stations; abstracts of climatological observations, chiefly temperature and rainfall (for 9 a.m.) at 73 stations; earth temperatures observed between 3 inches and 6 feet at various stations; and, lastly, the observations from the Quarterly Reports of the Registrar-General, with remarks on the weather by James Glaisher.

THE second part of the Annual Report of the Chief Signal Officer (U.S.) for 1889 contains a treatise entitled, "Preparatory Studies for Deductive Methods in Storm and Weather Predictions," by Prof. Cleveland Abbe. The object of the paper is to consider the physical principles that are involved in the formation and motion of storms, and that have guided the author in predicting storms in his official capacity in the Signal Service, and it is an able and most instructive exposition, with very few mathematical formulæ, of the progress made in meteorological science during the last thirty years. The author distinguishes between matters that are important, such as the earth's rotation, gravitation, and solar radiation, and those that are unimportant, such as lunar influence, atmospheric electricity, and magnetic disturbances. The general idea that underlies the work is that a storm centre moves towards the region where conditions produce the greatest precipitation of aqueous vapour. Objection is urged against the idea that high westerly currents carry the storms of America eastward. The work is obtainable in a separate form.

A NEW theory of sea-sickness has been recently offered by M. Rochet. Accepting the view that the symptoms are those of cerebral anæmia, he accounts for this anæmia by the disorder brought into muscular contractions through not being used to such sudden movements as those of vessels. He points out the enormous capacity of the reservoir formed by the muscular and perimuscular venous system, and the considerable *rôle* of tonicity and voluntary or reflex muscular contractions in the action of emptying it; also the predominance of reflex muscular actions over voluntary, in keeping one's balance, and in most movements. In the movements of a vessel, the relaxation of muscular tonicity and suppression of reflex movements result in a considerable increase of the peripheric reservoir, and, as a consequence, in cerebral anæmia. Hence it is that the descent of the ship is the most trying motion; and one can understand the benefit of the horizontal position, compression of the abdomen, fixing the body in a tight position, &c. Very young children are not ill, because the education of the reflexes in them is not yet accomplished. On solid ground they reel as on deck. M. Rochet's advice is, not to look to anæsthetics, soothing drugs, &c., for relief, but rather to muscular excitants, and above all to seek in voluntary movements a compensation for the reflex movements which are not produced. He recommends strychnine, veratrine, ergot of rye, and drinks charged with carbonic acid.

MR. S. V. PROUDFIT has presented to the U.S. National Museum a collection of stone implements from the district of Columbia. In an account of the collection, published in the Proceedings of the Museum, Mr. Proudfit pays a tribute to the handicraft of the aboriginal tribes of the region in which the collection has been formed. The material with which they wrought was, he says, the most obdurate and refractory of all substances found available to any considerable degree among the American Indians. Quartz, quartzite, and argillite for the greater part were used from necessity, no better material being within reach. The first two are very hard, and, in the hand of the workman, full of unpleasant surprises. The argillite, though softer, is not susceptible of receiving or retaining any high degree of finish. Notwithstanding these obstacles, the material was treated "with such patience, care, and skill, that the work of this region, not only in matters of utility, but in points of finish, compares favourably with that of any other."

A PAMPHLET by Dr. Edward Sang, on the exhibition of curves produced by the vibration of straight wires, which was read before the Scottish Society of Arts last November, has been sent to us. The means adopted for obtaining these curves was to make one end of a wire fast in a vice, while the other end was free to move; the motion of the wire being made visible by fixing to the free end a small polished knob capable of reflecting light from some given source. These phenomena were clearly found to be connected with the unroundness of the wires, and the object of the paper was to inquire what would be the result with a given irregularity. The ratios of vibrations having been varied, different results were obtained, and it was noted that when the ratio was expressed by two odd numbers, the closed curve connected two opposite corners and passed through the centre, but that when one of the numbers was even, the closed curve connected two adjacent corners and did not pass through the point of rest. Illustrations of some of these curves are given, showing their delicacy and symmetry similar to those curves formed by the resultant motion of two pendulums of different periods oscillating at right angles to one another. With bent wires particularly, as the author states, "the poetry of motion, the gracefulness of curvature, attract the student of the fine arts, who may find examples ranging from the severe classic and tragic to the extravagant burlesque styles."

IN the last issue of the *Bulletin* of the Moscow Naturalist, Madame Marie Pavloff concludes her excellent studies on the palæontology of the Ungulata. She examines the fossil relics of the *Hipparion* in Russia (*H. mediterraneum* and *H. gracile* which she considers as the same species, and the probably new species of *H. minus*), as well as the relics of the Pleistocene horses found in Russia, and gives a genealogy of the Equideæ since the Mio-Pliocene period. At the beginning of the Middle Pliocene, horses akin to *Eq. hippidium*, which at that time were living in America only, emigrated from West America to Asia, and during the Middle Pliocene epoch they developed in the Siwalik mountains into forms now described under the name of *Equus sivalensis*. Part of the latter migrated from Asia to Africa, at that time connected with Italy, and thus reached Europe. In the Upper Pliocene deposits of Africa and Europe we have the *Eq. stenonis*, which is very near to the foregoing. Having thus reached Europe from Asia during the Upper Pliocene, they left their fossil relics in the *Eq. stenonis* in Italy, Austria, Germany, France, Great Britain, and Russia, and slowly evolved the Pleistocene species of *Equus caballus*. However, one part only of the *Equus sivalensis* having left Asia, the remainder developed at the same time into the *Equus nomadicus* in Asia; while in America a parallel evolution gave rise to the *Eq. excellus* and *Eq. major* and to *Equus caballus fossilis* in Africa. As to the present horses of Russia, they all originated from the same Pleistocene species which already at that time offered great varieties in Europe. The variety of the Russian races depends upon the continued mixture of forms which developed in Russia with those which were imported from Asia on the one side, and from Western Europe on the other side.

SIR WILLIAM GREGORY, a former Governor of Ceylon, has lately been revisiting that island, and has communicated to a local journal a series of notes and observations. In one of these he refers to the well-known Colombo Museum, as to which he says it is hoped that a very liberal extension will be conceded by the Legislative Council without delay. Important objects of natural history have been procured and cannot yet be exhibited, books of value to the general reader and to inquirers have accumulated without the means of arrangement, and the space for large archæological objects which should be carefully and liberally displayed is altogether defective. There is one department, continues Sir William, hitherto much neglected, to which special care should hereafter be devoted, viz. that of geology. A geologist of high attainments ought to be engaged for a fixed period of a few years, during which a general geological survey should be made and a perfect collection be formed of the rocks, clays, and gems which are a specialty of Ceylon. These, if properly exhibited and properly protected from theft, would be one of the most valuable and interesting portions of the Museum to a large number of visitors.

THE *North China Herald* of Shanghai, in a recent curious and interesting article on modern science in China, says that the views now held by intelligent Chinese on the origin of science are that the knowledge possessed by their ancestors leaked out to the men of Western nations, who improved on the information they received, and gradually developed modern sciences and inventions. This idea was started by Mei Wu-ngan in the reign of Kanghi, and has been maintained ever since with singular persistence, and the cultivated class have consoled themselves with this thought during the past two centuries. Those who are really in favour of introducing foreign improvements say:—"We wish to make use of the knowledge of Western men because we know that what they have attained in science and invention has been through the help that our sages gave them. We have a good right to it. What Europe has done she has done through the help we gave. If we did not exactly give science to Europe, we gave it the fruitful germ which produced it. They have the science of optics, but in our 'Motsz' we find that reflection from mirrors was known in the days of Mencius. The men of the West hold that the earth is round. This was believed also by our poet Chü Yuen, who in his ode on astronomy announces this doctrine; and this was not many years after Mencius. This being so, we ought not to be ashamed of the study of Western science. We are the rivals of the Western kingdoms, and it is good policy to use their spears in order to pierce their shields. We ought to train our youth in Western science so that we may know how best to meet them in the struggle to resist their encroachments." Mei Wu-ngan and others read the books translated by the Jesuits, including Euclid and the teaching of astronomy, and they were delighted with the new views. The Jesuits, however, were in high favour at Court, and while they basked in sunshine the native mathematicians shivered in the shade. This was not agreeable, and the native astronomers went home each day from Court dissatisfied. One of them, Yang, ventured to foretell an eclipse. Adam Schaal, a Jesuit, in Pekin, foretold the same eclipse, and his hours, minutes, and seconds agreed with the fact. This was a crucial case. All Pekin was waiting with interest to know the result. The prophecy of the foreigner proved by its fulfilment the errors of the Chinese mathematician, who retired in disgrace from the position which he held. He went back to his home to write the book called "The Inevitable Exposure," which contained a series of calumnies and grossly untrue accusations against the Jesuit fathers. This bad book made him much more notorious than his works on mathematics. The unscrupulous enemies of the Westerns have reprinted it again and again, and they still do so. Very different was the tone of Mei Wu-ngan, who was invited three days in succession by the Emperor Kanghi to converse with him upon mathematical subjects. He had a fondness for mathematics, and read voraciously. He was therefore in a position to criticize Western knowledge in an appreciative manner.

The additions to the Zoological Society's Gardens during the past week include two Grizzly Bears (*Ursus horribilis*) from the Missouri Brakes, Montana, U.S.A., presented by Mr. Ewen Somerlid Cameron; a Raccoon (*Procyon lotor*) from the Catskill Mountains, New York State, presented by Mr. James H. Frodsham; a Greater Black-backed Gull (*Larus marinus*), a Herring Gull (*Larus argentatus*), British, presented by Mr. A M. Bailey; a Common Tern (*Sterna hirundo*), British, presented by Mr. A. C. Howard; two Mississippi Alligators (*Alligator mississippiensis*) from the Mississippi, presented by Miss Edith Baker; a Macaque Monkey (*Macacus cynomolgus* ♂) from India, a Great Kangaroo (*Macropus giganteus* ♂) from Australia, deposited; a Horned Screamer (*Palamedea cornuta*) from the Amazons, three Violet Tanagers (*Euphonia violacea*) from Brazil, an Ocellated Sand Skink (*Seps ocellata*), South European, purchased; a Chestnut-breasted Duck (*Anas castanea*) from Australia, received in exchange; a Crested Pigeon (*Ocyphaps lophotes*) bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

Objects for the Spectroscope.

Sidereal Time at Greenwich at 10 p.m. on October 9 = 23^{h}. 13m. 52s.

Name.	Mag.	Colour.	R.A. 1890.	Decl. 1890.
			h. m. s.	° ′
(1) G.C. 4892	—	—	22 59 26	+11 44
(2) G.C. 4921	—	—	23 10 22	+ 5 46
(3) χ Aquarii...	5	Yellowish-red.	23 11 9	− 8 13
(4) ξ Pegasi	5	Yellowish-white.	22 40 26	+11 40
(5) 19 Piscium	6	Red.	23 40 46	+ 2 52
(6) R Aquilæ	Var.	Very red.	19 1 5	+ 8 4

Remarks.

(1 and 2) Neither of these nebulæ have yet had their spectra recorded. The first of them is about 4′ long by 2′ broad, and has been described as "a streak tapering at each end"; in the General Catalogue it is described as "pretty bright; considerably large; much elongated in the direction 11°·9; between two stars." The second is described as "considerably bright; pretty small; irregularly round; pretty suddenly brighter in the middle." They are both very conveniently situated for observation.

(3) The spectrum of this star is a very fine one of Group II., all the bands being wide and dark. Carbon comparisons will probably be the most valuable observations of this star, the character of the spectrum indicating that the flutings should be considerably bright.

(4) Secchi thought that this star had a banded spectrum, but Dunér states that it is one of the solar type ("Sp. II.*a* ! du type le plus pur"). It still requires observing with reference to Groups III. and V.

(5) The spectrum of this star is one of the very finest of its class (Group VI.). It has been observed in considerable detail by Vogel and Dunér. All the principal and secondary bands are well visible. The carbon band 6 (λ 564) is stated by Dunér to be feebler than the others, and so far as we yet know this is the only band in which any considerable variation is established. It will be remembered that this is the cometary band which varies most, but in comets it varies in position also. It seems possible, therefore, that it may also change in position as well as in intensity in stars of Group VI. Comparisons with a spirit-lamp flame would easily decide this point.

(6) This variable has a well-marked spectrum of Group II. Dunér describes it as "very fine," and states that the bands are very wide and dark throughout the spectrum. The period is about 345 days, and it ranges from 6·4–7·4 at maximum to 10·9–11·2 at minimum. The star falls in species 9 of the subdivision of Group II., and if it behaves like other variables with similar spectra, bright lines should appear at or about maximum. The spectrum should also be observed for brightenings of the carbon flutings.
A. Fowler.

Observations of Comets.—Prof. E. E. Barnard, of Lick Observatory, contributes a note on Comets 1889 I. and II. to the *Astronomical Journal*, No. 225, and makes some suggestions as to the possibility of seeing the short-period comets at aphelion. The majority of observers neglect comets as soon as they become faint or difficult to see. Prof. Barnard has made it a point to take up comets when they have been dropped elsewhere, and to observe them as long as they can be seen. Comet 1889 I. has been observed at Lick Observatory from September 2, 1888, to August 18, 1890—that is, for very nearly two years; and Comet 1889 II. from March 31, 1889, to August 24, 1890—that is, for 16 months 24 days: hence the duration of visibility of each exceeds that of the great comet of 1811, which was followed for 16 months 20 days. At the observation of Comet I. 1889, on August 17, its distance from the sun was 6·25 times the earth's mean distance. On August 24, Comet II. 1889 was 5·06 times the same unit from the sun, and Prof. Barnard thinks he will be able to follow it for quite six months longer. The following are the aphelion distances of short-period comets (excepting Tuttle's) recognized at more than one return:—

Encke's	4·10	Brorsen's ...	5·66
Tempel's II. ...	4·66	D'Arrest's ...	5·72
Tempel's I. ...	4·82	Faye's ...	5·92
Swift's 1880 ...	5·14	Biela's ...	6·19
Winnecke's ...	5·50		

It will be seen that Comet I. 1889 is now being observed at a distance from the sun greater than it is possible for any of the short-period comets to attain. It would appear, therefore, that some of the latter class of comets ought to be followed throughout their entire orbits.

Photographing Stars in the Daytime.—In the *Astronomical Journal* for September 16, 1889, Prof. Holden gave an elementary theory of the subject of photographing stars projected against a bright background. He showed that, if the intrinsic brilliancy of a star be ten times as great as its background, the photographic image in the Lick telescope was 4124 times brighter than that of the sky. It was also proved that small photographic contrasts of this character could be increased with a given telescope by simply cutting down the aperture. Recently, Prof. Holden writes (*Astr. Journ.*, September 19, 1890), "the question has been examined experimentally by Mr. W. W. Campbell and myself, using the great telescope (focus, 570 inches) and apertures of 33, 15, 8, and 4 inches. Photographs of Venus, Mercury, the moon, and of Alpha Lyræ have been taken in broad daylight (2 to 5 p.m.) with the apertures named, with a constant exposure of 0·13s., and on Seed 26 plates. In general, the smallest apertures used have given the darkest images, as demanded by the theory."

PHYSICS AT THE BRITISH ASSOCIATION.

In Section A, nine Reports of Committees and fifty-four papers were read. Perhaps the distinguishing characteristic of the Section is its tendency to bifurcation on the slightest provocation. Several Sections do not meet at all on the Saturday, and manage to get through their business comfortably by the Tuesday. Not so Section A. On the Saturday, under the influence of electrolytical attractions and repulsions, there occurred a dissociation of the Section into its constituent elements, accompanied by a migration of ions from places of high potential (in a Bramwellian sense) to places of low, or *vice versâ*. In accordance with the law of ionic migration enunciated by Sir Frederick at the concluding meeting, the ions collected at the